THE EUGENICS REVIEW

VOL. XLIII, No. 4 JANUARY 1952

CONTENTS

The Eugenics Society is not responsible for statements made or opinions expressed by authors of articles, reviews and letters.

The EUGENICS REVIEW is regularly indexed in the *International Index to Periodical Literature*.

Published Quarterly.

Cassell & Company Ltd., 37/38 St. Andrew's Hill, Queen Victoria Street, London, E.C.4.

Price: Three Shillings per issue and Twelve Shillings per annum, post free.

Issued free to Fellows and Members.

PERIODICALS

Annals of Eugenics

July 1951, Vol. 16, Part I.—*The analysis of heterogeneity in the binomial distribution.*—By A. Robertson.

A test for heterogeneity of proportions.—By C.A.B. Smith.—Two closely related papers discuss the quantitative assessment of the degree of heterogeneity in the parameters of a series of binomial distributions. Robertson considers the possibility that the parameter is itself a random variate from a continuous distribution; he develops and compares methods of estimating the variance of this distribution and in particular finds a simple method that is generally almost as efficient as the maximum likelihood method. He also discusses a particular case of major importance in genetics, that in which the parameter can take only two different values and the relative frequency of these is to be estimated. Smith proposes a new criterion for testing heterogeneity in a contingency table of any size. One of its advantages, as compared with the classical χ^2 test, is that it can be used even when some of the expected frequencies are small. He suggests that his test is more powerful than the χ^2 test, though the argument for this is by no means complete and the correct answer may well depend upon the type of deviation from homogeneity that occurs. By a transformation that may have wider uses, he constructs an approximate significance test for the new criterion.

On simplifying the use of Fisher's u-statistics in the detection of linkage in man.—By N. T. J. Bailey. —*The detection of linkage for partially manifesting rare "dominant" and recessive abnormalities in man.*—By N. T. J. Bailey.—In the first paper, Bailey puts the theory of efficient scores for genetic linkage, as developed by Fisher and Finney, into more general form so as to assist the rapid construction of the various functions needed in scoring a new genetic situation. In the second paper he uses and extends these ideas for constructing systems of scoring suitable for rare and incompletely manifested abnormalities, in which case the penetrance has also to be estimated.

The familial occurrence of disseminated sclerosis. By R. T. C. Pratt.—Evidence from 220 patients is examined and is found to indicate a higher incidence of the disease in sibs and parents than in the general population. The genetic mode of inheritance is unknown, but both sib-pairs and parent-child pairs show an excess of like-sexed pairs. Maternal age at birth appears to be about two years above the mean for the general population. The data are fully tabulated.

The genetics of "cystinuria"—By C. E. Dent and H. Harris.—The authors review the literature of cystinuria, as a preface to discussion of eleven new cases. Amongst many relatives of these propositi eleven more cases were found. Excretion of amino-acids was studied by paper chromatography, and in every instance amino-acids other than cystine were identified in the urine. Clear differentiation between three distinct types of aminoaciduria was possible; clinical, biochemical and familial findings combine to suggest that genetically determined cystinurias may be classified as "classical" cystinuria, Fanconi's syndrome, or hepato-lenticular degeneration. The first of these, the authors suggest, may be inherited as a dominant abnormality with incomplete manifestation, though recessive inheritance cannot be dismissed as impossible; for the other two, recessive inheritance would suffice to explain the data but the evidence is very far from conclusive.

Two pedigrees of ectrodactyly.—By Helen J. MacKenzie and L. S. Penrose.—New information is presented on a "lobster-claw" pedigree first reported in 1908, and a second pedigree of a very similar condition is also shown.

Note on the analysis of variance and intraclass correlation.—By E. C. Fieller and C. A. B. Smith.—This paper is intended to illuminate the relationship between intraclass correlation and variance analysis for the special benefit of geneticists. Alternative estimates of components of variance are formulated and compared, and their use in estimating the intraclass correlation coefficient is considered. The biases that may arise in various estimates, especially when numbers of observations in different classes are unequal, are discussed. The paper will undoubtedly be of interest to students of the algebra of the analysis of variance, but it appears perhaps a little heavy for those whose knowledge of statistical theory is slight; the choice of notation is sometimes unhappy, as for example in the use of a sequence of four letters to represent a sum of squares or a mean square.

September 1951, Vol. 16, Part 2.—*Changes in sex incidence of diabetes mellitus* (1912-47).—By H. Harris and Norma McArthur.—Examination of English, North American, and Scandinavian records shows a progressive increase in the ratio of female to male mortality from diabetes mellitus. At the beginning of the period studied, male mortality was slightly the higher, but by the end it had fallen to between one-half and three-quarters of the female rate. English data for 1930-2 indicate that the male rate is greatest in the upper social classes, while the opposite is true for females. Explanation might be sought in an environmental factor affecting the sexes differentially, but the authors can find no such factor. Alternatively they suggest that sex limited genetic factors may be important, though they emphasize that the manifestations of these would need to alter greatly in very few generations.

Taste thresholds of further eighteen compounds and their correlation with P.T.C. thresholds.—By N. A. Barnicot, H. Harris and H. Kalmus.—Serial dilutions were presented to about twenty subjects, in the manner described in an earlier paper. Several compounds were found to show the bimodality of threshold distribution characteristic of P.T.C., and to correlate closely with P.T.C.; the authors discuss the relationship of this property to chemical composition. The subjects tested are regrettably few, but in some instances support the ideas advanced so strongly as to leave little doubt: for example, though tested on only thirteen subjects, mercaptobenzothiazole shows a correlation coefficient of 0.974.

Rh blood types in Jerusalem Jews.—By J. Gurevitch, D. Hermoni and Z. Poleshuk.—Data from 1,335 samples show a high proportion of Rh_1 and a low proportion of Rh_1 Rh_2. The frequency of Rh negatives approaches that for Europeans. No information is given on how the subjects for sampling were selected and whether they are truly representative of the three communities included; this matter needs more careful attention from the many workers now engaged in geographical and national surveys of blood groups.

The rare gene CdE(r_y) in a Basque family.—By H. Grove Rasmussen, J. J. van Loghem, W. Magnée and L. Souchard.—Six members of a Basque family have been shown to be of type CdE. Details of the Rh groups for these and other members of the family have been recorded.

Measurement of pleiotropic effects in phenylketonuria.—By L. S. Penrose.—The ratio of the difference in means for phenylketonurics and normals in various measurements to the mean standard deviation is used as an index of the discriminating powers of the measurements, being closely related to the proportion of the population that would be misclassified on the evidence of each measurement. As might be expected, measurements closely related to the gene action (such as phenylalanine in body fluids) have a much higher index than measurements less directly affected (such as hair colour and head size). Several other genetically controlled abnormalities are discussed similarly. Penrose emphasizes the difficulty or impossibility of dividing genes into those with major and those with minor effects, since detailed study will usually show that any gene has many different measurable effects.

Pachyonychia congenita: A report of six cases in one family.—By A. D. M. Jackson.—Six members of a family were affected by this condition, characterized by thick horny masses on the free edges of the nails and widespread dyskeratosis. These individuals also had erupted teeth at birth and sebaceous cysts at puberty. The pedigree covers three generations. In opposition to the more complex hypotheses advanced in the past, the author suggests that the multiple defects may be attributable to a single dominant gene.

Birth weight and gestation time in relation to maternal age, parity and infant survival.—By Mary N. Karn and L. S. Penrose.—This paper is a continuation of the study of nearly 14,000 births at a London hospital between 1935 and 1946. The first analyses relate to the dependence of birth weight and gestation time on parity and maternal age. As factual statement of the statistical dependence observed in a large sample this is of considerable interest, but the inferences drawn about how changes in family size might affect birth weights seem to assume a causal dependence and to omit consideration of the nature of the population from which the sample is taken. The greater part of the paper is concerned with examination of the relationship between infant survival (to twenty-eight days and longer) and birth weight and gestation time. For each sex, a system of curves is fitted to represent the chances of survival for different combinations of birth weight and gestation time. These indicate optimal values of 7.8 lb. and 283 days (for which more than 99 per cent survival is to be expected), with steadily decreasing chances as either weight or time deviate more and more from their optimals. The average survival rate was 95.2 per cent for boys, 95.9 per cent for girls, and for birth weights and gestation times giving results as good as or better than average the advantage for girls was appreciable. The curves drawn for low survival rates (even those for 10 per cent and 1 per cent are shown) can scarcely be very precisely determined, since the average survival rate was so high, and perhaps these might have been presented with more clearly stated reservations. The paper is an original and interesting contribution to the study of complex phenomena, and makes use of an ingenious statistical technique.

Seasonal variation in the Indian birth-rate.—By D. D. Kosambi and S. Raghavachari.—After their commendably frank discussion of the utter unreliability of Indian birth records, it is difficult to understand why the authors troubled to present the analyses that give the title to their paper. They include mathematical theory useful for other studies of annual cycles and they rightly emphasize the flaws inherent in the conventional fitting of polynomials to data represented by rectangular coordinates. The polar diagrams and the associated analytical techniques suggested may prove valuable in future research, both for visual presentation and for interpretation. The data from Bombay and Poona that they analyse, however, are patently so completely untrustworthy, especially in respect of the allocation of births to months, as to make the detailed discussion of seasonal maxima and minima of no value: the inclusion

of statistical analyses with entries shown to ten digits is absurd. The authors do no service to their new statistical techniques, nor to their useful general comments on India's population problems, by associating them with such analyses.

D. J. FINNEY.

Human Genetics

December 1950, Vol. 2, No. 4.—*Primary biases in twin studies.*—By B. Price.—The author suggests that many comparisons of the relative importance of environment and heredity based on twin studies underestimate the importance of heredity because they do not make sufficient allowance for the effects of possible prenatal and natal causes of differences between monozygotic twins. He considers the most important of these sources of difference to be the common placental circulation which is present in all monochorial monozygotic twins (the majority of monozygotic twins have a common chorion). These anastamoses may be so extensive that one twin without a heart may be kept alive during fœtal life by the blood circulated by the heart of his normal co-twin. It is theoretically possible that these anastamoses may permit considerable imbalance in the circulation of one of the twins.

The author suggests, too, that it is not safe to estimate the manifestation rate of genes from the proportion of monozygotic twins who are concordant.

The use of dichorionic monozygotic twins for such studies is not open to the same objections.

It would be interesting to put the author's hypothesis to experimental test, for example by noting whether dichorionic monozygotic pairs differ less than monochorionic pairs or whether the manifestation rate of genes estimated on the percentage concordance of monozygotic pairs is less than that estimated in other ways.

Determination of the zygosity of the Waddington quintuplets.—By Norma Ford Walker.—These quintuplets, all girls, were born prematurely 165 years ago. The two born alive soon died and all five were preserved and sent to the museum of the Royal College of Surgeons. The author was able to get good palm and foot prints of all of them and in this way to show that these quintuplets were very probably monozygotic.

The Dionne quintuplets and a set reported from Duke University were also monozygotic.

Situs inversus, asymmetry and twinning.—By J. Torgersen.—The author has made use of the exceptional facilities afforded by mass radiography to examine the relationship of situs inversus to asymmetry and twinning.

He found 200 cases of situs inversus among 1,800,000 individuals over the age of fifteen in Norway and collected seventy additional cases from health authorities. There was no exceptional incidence of twinning among the near relations of these men and women, nor were an undue number of them themselves members of twin pairs. There was no increase in left-handedness either among the individuals affected or among their near relatives. There was no increase of consanguinity among the parents of men and women with situs inversus. Of 1,222 brothers and sisters of 229 unselected index cases, eleven also had situs inversus.

Congenital malignant neuroblastoma of the suprarenal gland in one of twin girls.—By H. Brody.

Discordant monozygotic twins with retinoblastoma and cleft palate.—By N. F. Walker.—This pair of twins adds to the evidence that if the condition is due to a dominant gene, manifestation is not 100 per cent.

The genetics of psychoses.—By Franz J. Kallman.—The author reviews here the very considerable amount of information he has collected on the frequency of psychoses in the twin brothers and sisters and other near relations of men and women with a psychosis.

Dividing psychosis into three groups—manic depressive, schizophrenic and involutional—he finds that in no instance in his series did the members of a monozygotic twin pair fall into different groups. There were no dizygotic pairs of which one member was a manic depressive and the other a schizophrenic. There were no manic depressive index cases with an authentic schizophrenic near relation. While the general incidence of schizophrenia was increased in the near relations of schizophrenic index cases, as was the incidence of manic depressive insanity among the near relations of manic depressive index cases, there was a definite increase in both types of insanity among the near relatives of index cases with involutional insanity.

Among the monozygotic twin pairs concordant for manic depressive insanity the heavier twin is the more severely affected, while among the pairs concordant for schizophrenia it is the lighter twin who is the more severely affected.

The author postulates a recessive factor as the main hereditary component in schizophrenia and an irregular dominant as the main factor in manic depressive insanity.

Heredity in ankylosing spondylitis.—By A. H. Hersh, R. M. Stecher, W. M. Solomon, R. Wolpaw and H. Hauser.—This study is based on a study of the families of fifty index cases: a consecutive series from four hospitals and private practice. Of seventy-four brothers, three were also affected, of sixty-two sisters, three were affected, while one father and no mothers were affected. The probable frequency of the condition in the general population is about one in 2,000, so these findings

strongly suggest that heredity is important in the causation of this disease.

The authors suggest a dominant factor of low manifestation rate in women (about 10 per cent) and fairly high manifestation rate in men (about 70 per cent). However, in the sibships containing affected women penetrance appears to be almost complete in both sexes.

C. O. C.

Fertility and Sterility

May-June 1951, Vol. 2, No. 3.—*The male factor in fertility and infertility.*—By John MacLeod and Ruth Z. Gold.—III. *An analysis of the motile activity in the spermatozoa of* 1,000 *fertile men and* 1,100 *men in infertile marriage.*—In previous papers the volume and numbers of spermatozoa in the above two groups of men have been considered.

Whether the percentage of motile sperm or the quality of motility assessed on an arbitrary scale is considered, a central group is found in which there is no difference between the proportion of fertile and infertile donors. Below this level non-fertile donors predominate; above it there is an excess of fertile donors. No level was found below which all donors were infertile.

The quality of motility improves with increasing percentage motility. For any selected grade of quality the percentage motility is higher in the fertile than in the infertile group.

There is no relation between volume and motility in the infertile group, but in the fertile group maximal motility is found in specimens with a volume between 2 ml. and 5 ml., and is less good where the volume is unusually large or small.

Up to 40 million sperm per ml. the average percentage motility and also the quality of motility increase with sperm count, but above 40 m./ml. no further improvement is found. For any selected sperm density, the average motility is better in the fertile than in the infertile group.

It is clear from these findings that both sperm count and motility must be assessed to determine the chances of success of a given donor, the two factors being to a large extent compensatory.

Fertility and sterility as revealed in the study of fertilization and development of rabbit eggs.—By M. C. Chang.—Since ovulation in the rabbit is not spontaneous but occurs about ten hours after mating, or after the injection of gonadotrophic hormones, the time sequence of fertilization can be estimated with more accuracy than in other animals.

Transportation of sperm to the upper third of the fallopian tube takes about four hours, only about one in 10,000 of the sperm inseminated reaching the tube. Sperm wait in the tube six hours before ovulation. Two or three hours after ovulation, although the egg is still surrounded by follicular cells, sperm have entered the eggs. Ten to twenty sperm may enter the perivitelline space in one egg. The ciliary cells of the upper part of the tube are responsible for the tearing-off of the corona cells, though this may be facilitated by the presence of sperm. The egg reaches the lower part of the tube in about eight hours. Implantation in the uterus begins on the sixth day after fertilization.

Fertilized eggs at different stages of development were transferred to the uterus or tubes of foster mothers in which ovulation had been induced without fertilization. Very early stage eggs degenerated in the uterus whatever stage of development the endometrium may have reached. If transferred to the tubes the eggs developed normally in the tubes, but only became implanted if they arrived in the uterus later than four, or earlier than eight, days after the ovulation of the foster mother. Successful implantation in the uterus depended on the luteal phase of the mother and foster mother being the same, and also on the egg being at the right stage of development.

Effect of environmental temperature and the thyroid gland on fertility in the male rabbit.—By M. M. Oloufa, R. Bogart and F. F. McKenzie.—In a series of experiments, in which male rabbits were kept at continuous or at intermittent high temperature (91 deg. F) and their diet supplemented with thyroprotein in some sets but not in others, it was demonstrated that a reduction in fertility followed this high temperature treatment. Fertility was assessed on semen quality and testis weight and also by observations on sexual behaviour. A further series of rabbits kept at normal temperatures were given thiouracil to reduce thyroid activity.

The normal reaction of the rabbit to high temperatures is a reduction in thyroxine output, shown by decrease in weight of the thyroid gland. This causes a reduction in fertility, but the effect of high temperatures is only partially alleviated by feeding thyroprotein. It is concluded that the subfertility of domestic animals living under hot climatic conditions is in part due to the direct action of heat on the testis.

Hereditary forms of sterility in Swedish cattle breeds.—By Nils Lagerlof.—In a survey of the anatomy and behaviour of 10,000 cows in Swedish pedigree herds, it has been conclusively established that underdevelopment of the ovary or testis is hereditary in some strains. This is also the case for ovarian disturbances which result in behaviour ranging from nymphomania to extreme virilism. A tendency to endocrine insufficiency, resulting in weak heats in the female and inability to mate in the male, may also be inherited. High milk yield intensifies these endocrine defects in the cow, owing to the great demand on the endocrine apparatus.

Experiments with monozygous twins have shown that feeding and environmental conditions have

little effect on the fertility of cattle but subfertile animals are more affected than normal ones by poor environment.

Cattle breeders should be advised not to breed from animals showing any of the symptoms described and attempts to improve the fertility of individual animals by endocrine treatment may, if successful, have disastrous effects in spreading subfertile characters throughout the herd.

Superovulation and ovum transfer in cattle.—By R. E. Umbaugh.—Superovulation may be induced in the cow by implanting a pellet of gonadotrophin, followed two to nine days later by an intravenous injection of gonadotrophin. Twenty to thirty-eight ova per cow were ovulated twenty-four hours after the injection. In cows inseminated artificially after superovulation, only half the eggs produced by the ovary could be recovered from the fallopian tube and uterus, and of these only half were fertilized. Eggs recovered from any one cow were at varying stages of development, some having reached the uterus prematurely.

In four cases in which fertilized eggs from superovulated cows were transferred to the uterus of a foster mother all the cows showed normal symptoms of pregnancy but all aborted, the duration of the pregnancies being 65 days, 100 days, 112 days and eight months. Two of these abortions may have been due to infection in the mother.

Arrival of fertilizing sperm at the follicular cell of the secondary oocyte.—By R. Moricard and J. Bossu.—In the rat, fertilization takes place ten to fifteen hours after mating and at this time the number of sperm in the ampulla of the fallopian tube may be equal to or less than the number of oocytes. The eggs are still surrounded by follicular cells when fertilization takes place. Twenty-four hours after mating 100 or more sperm may be found among the dissociated follicular cells. When the sperm are not very numerous the dissociation of the follicular cells is not complete even at this time.

Culdoscopic observations on tubo-ovarian mechanism of ovum reception.—By Albert Decker, M.D.—The author and his colleagues have made many culdoscopic examinations of the pelvic organs and here record some of their observations; notably that in the normal childbearing pelvis the ovarian ligaments which are contractile structures will be seen to vary in length and thickness at different times in the cycle. Round about ovulation time they are at their thickest and shortest and tend to draw the ovaries towards the uterus into small fossæ on the posterior surface of the broad ligaments where they are in close contact with the tubal fimbriæ. It seems likely that this mechanism facilitates the passage of the ovum from follicle to tube, and anything that interferes with it is liable to interfere with fertility, even in the presence of tubal patency. As examples of such conditions which may be spotted with the culdoscope the author mentions adhesions and scarring from various forms of pelvic inflammation, including tuberculosis and endometriosis.

The role of latent genital tuberculosis in the pathogenesis of female sterility.—By I. Halbrecht.—In a series of 1,550 cases of infertility in women Dr. Halbrecht has diagnosed latent pelvic tuberculosis seventy-one times, and all but one occurred in cases of primary sterility. The diagnosis was made by means of endometrial biopsy in sixty-two cases, and by culture of mycobacterium tuberculosis from the menstrual and intermenstrual discharges in nine. He maintains that latent pelvic tuberculosis must always be borne in mind as a possible cause of unexplained sterility in women and that its sterilizing effect is final. He has had the seventy-one women under close observation for periods ranging from one to ten years and during that time not one of them has conceived, in spite of the fact that spontaneous cure had apparently occurred in three. Although the prognosis so far as fertility is concerned is, in his opinion, virtually hopeless, that for life and general health is comparatively good, two only out of the seventy-one women having died of generalized tuberculosis (one following laparotomy). No mention is made of the value of streptomycin in dealing with these cases.

July-August 1951, Vol. 2, No. 4.—*Evaluation of the basal body temperature.*—By S. L. Siegler and A. M. Siegler.—From the study of the basal temperature charts kept by 202 women for periods of from three to eighty-nine cycles the authors conclude that the recording of basal body temperatures, provided it is done accurately and according to certain instructions, is of limited value in the investigation and treatment of cases of infertility. Unfortunately, it does not provide a precise indication of when ovulation has occurred. Their data also suggest that the length of the luteal phase is variable and that conception occurs more easily in women with a staircase thermal shift than in those with an abrupt type of shift. Pregnancy can, of course, be readily and cheaply diagnosed by means of a well-kept basal temperature chart but the authors stipulate three weeks on the higher level before pregnancy can be regarded as established.

In the discussion which followed, Dr. Buxton very rightly pointed out that the preponderance of pregnancies in women with a staircase type of thermal shift might well be due to the fact that the group under review was composed mainly of subfertile, and therefore not strictly normal, women.

Obstetric abnormalities in the mother and child following sterility.—By Alan Grant.—The author analyses the end results of 851 pregnancies that occurred in a series of 2,359 patients seen at the sterility clinics in the Women's Hospital, Sydney,

and divides them into the following groups: miscarriages, 88; ectopic gestations, 17; stillbirths, 9; neonatal deaths, 10; living infants, 438; still unconfirmed, 111; no record, 178.

Among the live-births there were six abnormal babies and twenty-two born prematurely. Certain points of particular interest may be mentioned: the incidence of ectopic pregnancy in this series is six times as great as that encountered in the general population, whereas the incidence of congenital abnormality is slightly lower (1.1 per cent as against 2 per cent in a general obstetric service). A study of the causes of death among the stillborn infants and those who died soon after birth suggests a high incidence of fœtal distress due to placental insufficiency during labour and the later stages of pregnancy, and the author considers this is an indication for a readier resort to Cæsarean section in "sterility" cases. Such data as he has neither prove nor disprove the theory that grossly defective sperm counts in the father are associated with fœtal defects in offspring.

The fertility of the only child.—By S. A. Asdell.—Having collected for quite another purpose a large number of detailed pedigrees of aristocratic families living mostly in France and Germany during the period 1400-1750, Dr. Asdell has used a careful selection of this material to study the fertility of only children and comes to the conclusion that they are no more or less fertile than the average.

He then studies the evidence upon which Galton relies when he propounds the theory that it is often disastrous for the family if an heiress is introduced into it by marriage, and comes to the conclusion that much of it is unsatisfactory. In his view there is no evidence in the data examined that any particular degree of fertility is inherited.

Effect of semi-starvation on human semen.—By H. B. Hulme.—The semen and subjective sexual reactions of twenty-eight men were studied while they were taking part in a comprehensive study of starvation and rehabilitation. After six months, semi-starvation (daily intake 1,570 calories), all the men complained of lack of sexual desire, and reported reduction in the frequency of masturbation and night emissions. Twelve of the men were unable to produce a semen specimen, while those who did so found it unexpectedly difficult. Some of those who failed were unable to produce an erection.

The volume of the semen specimens obtained was below normal in most cases, but the sperm count was exceptionally high, suggesting that the production of testosterone was depressed but not the rate of spermatogenesis. One man produced semen with no sperm, though after rehabilitation his count was normal. Twelve men produced second specimens five days after their first. These showed no fall in the sperm count, indicating that sperm were being produced continuously. Sperm morphology was normal but motility was much below normal standards.

After eleven weeks rehabilitation, the volume and sperm count were normal but the motility was still low. Motility was normal after twenty weeks. In some of the men libido took even longer to return to normal.

Electron microscope studies of normal and pathological human spermatozoa.—By C. A. Joel, H. Frei, and F. L. Hirshfeld.—Electron microscope studies of human spermatozoa, although suffering from the distortion unavoidable in dried preparations, reveal many characters only demonstrable with a light microscope after elaborate staining methods. The head is rather opaque to electrons but the arrangement of mitochondria in the middle piece, and the relation of the fibrils and sheath in the tail, can be seen clearly in suitable cells. No flaring of the fibrils at the distal end of the tail, as reported by other authors, was seen in these photographs.

CLARE HARVEY and
MARGARET C. N. JACKSON.

PHYSIOLOGICAL ZOÖLOGY

Edited by Warder C. Allee, University of Florida

In the October 1951 number:

THE CAUSES OF FIGHTING IN MICE AND RATS. By J. P. SCOTT and EMIL FREDRICSON.

FACTORS INFLUENCING THE STATE OF DISPERSION OF THE DERMAL MELANOPHORES IN RAINBOW TROUT. By O. H. ROBERTSON.

MODIFICATIONS IN THE DIURNAL PIGMENTARY RHYTHM OF UCA EFFECTED BY CONTINUOUS ILLUMINATION. By FRANK A. BROWN, JR., and MARGARET N. HINES.

ON THE SECRETION AND EXCRETION OF THE HEPATIC CELL OF ALBINO MICE. By P. B. VAN WEEL.

THE RATE OF CONDUCTION IN STRETCHED AND UNSTRETCHED NERVES. By R. S. TURNER.

PHYSIOLOGICAL ZOÖLOGY is published quarterly in January, April, July and October
Subscription $10 per volume Single copies $3 Canadian postage 20c. Foreign postage 50c.

THE UNIVERSITY OF CHICAGO PRESS, 5750 Ellis Avenue, CHICAGO

FROM THE PRESS CUTTINGS

" Test Tube " Babies in Denmark

Unmarried women should have the right to have " test tube " babies, according to Denmark's Minister of Justice, Miss Helga Pedersen, a strong feminist and judge by profession.

She said : " An unmarried woman should have the right to have a child by artificial insemination if she wants to. This idea is not surprising to us because we, in Denmark, know no difference between children born within or outside wedlock.

" So-called ' illegitimate ' children have the same rights as other children, and their birth carries no stigma either on mother or child. A child born out of wedlock has the same rights to inherit property from his parents as his ' legitimate ' brothers and sisters.

" But this does not mean that the overwhelming majority of children in future will not still be born as the result of the union of the sexes nor that husbands will become superfluous."

In due course, legislation might be necessary to regulate " test tube " parentage. At present, artificial insemination is legal in Denmark and is occasionally practised. It is not subject to any special regulations.[1]

Human Litter Sizes

It would take a statistician to work out the actual percentage figure, but obviously Baltimore is unusual in its having had three sets of quadruplets in less than five years. The percentage of frequency of quadruplets in the U.S.A. is only 0·0002, in comparison with 0·0119 for triplets and 1·1634 for twins. In other words, in 98·8 times out of a hundred only one child at a time is produced, and the frequency of quadruplets is something like one in every 600,000 to 700,000 births.

The biologists, who keep track of such matters, refer to the number of young produced per birth as " litter size," and they have found that the human litter size varies from country to country and from one part of a country to another. Denmark leads the world with its percentage of multiple births, and the United States is about halfway down the list. And taking the U.S.A. alone, Arkansas leads the list, with Nevada at the bottom and Maryland just about halfway between.

Of the twenty states which have mean litter sizes above the average for the United States as a whole, fifteen are located south of the Mason-Dixon line. One reason for this, and it has significance in the recent arrival of the Avance quadruplets, is that Negro Americans have a distinctly higher mean litter size than white Americans. More generally speaking, multiple births occur with greater frequency in the less wealthy, less urbanized, less industrialized and less socially advanced areas. Yet on a world basis, the litter size is lowest in the tropics and highest in most northern countries.[2]

Army Fights Psychoneurosis

The Army reports incorporating mental health concepts into its new command and leadership courses, aimed at cutting down the incidence of psychoneurosis in the troops. Unofficially, Army instructors call it " Human Engineering."

During World War II, more men suffered from mental and emotional breakdowns than are fighting in Korea today—and the Army wants to know why. Already, these facts have been clearly brought out : (1) Sixty per cent of breakdowns were not from " battle fatigue," they occurred before the men ever saw combat. (2) In a division with a high number of emotional disorders, the casualties from gunfire were also high. (3) Whatever basically was affecting the group seemed to be " contagious " to newcomers. (4) Under new leadership, the number of both psychoneurotic and gunfire cases dropped off.[3]

Birth Control

In India

A nation-wide experiment in birth control will be undertaken in India in a few months, Dr. Brock Chisholm, director general of the United Nations World Health Organization, said recently.

In a Press conference held in connection with opening of the annual convention of the American Public Health Association, Dr. Chisholm said that an educational programme under the auspices of the Indian Government would soon be started to teach the " rhythm method " of birth control.

The health agency of the United Nations is sending experts to India at the request of Prime Minister Jawaharlal Nehru. The first, Dr. Abraham Stone of the United States, is expected to reach India shortly.

" No religious objections have been expressed," Dr. Chisholm said. " The rhythm method apparently does not conflict with Moslem or Hindu teachings."[4]

In Indonesia

Anti-polygamy and birth control are among the items in the social field pursued by the " Partia Wanita Rakjat " (People's Women Party), said Mrs. Mangunsarkoro, the party chairman.

The party concluded its congress in Jakarta recently.[5]

In Japan

The Ford Foundation has informed the Japanese Government that they are prepared to donate $1,000,000 for the promotion of birth control in Japan.[6]

---

[1] *Birmingham Post*, November 8th ; [2] *New York Herald Tribune, Paris Edition*, September 28th ; [3] *U.S. Public Health Service, National Mental Health Program, Progress Report*, September 1951 ; [4] *New York Times*, October 30th ; [5] *Straits Times*, Singapore, September 15th ; [6] *Straits Times*, Singapore, September 20th.

"Galtonia candicans," which is reproduced on the front page of the cover, is a flowering plant named in honour of Sir Francis Galton in 1880 by Professor J. Decaisne of the Paris Museum of Natural History.

EUGENICS SOCIETY.

Honorary Past Presidents :

SIR FRANCIS GALTON
MAJOR LEONARD DARWIN
THE LORD HORDER

President :

*SIR ALEXANDER CARR-SAUNDERS, M.A., LL.D.

Chairman of Council :

*G. AIRD WHYTE, *M.C.*, B.Sc.

Vice-Chairman :

*R. PILKINGTON, *M.C.*

Vice-Presidents :

*G. C. L. BERTRAM, M.A., Ph.D.
L. J. CADBURY, O.B.E., M.A.
*PROFESSOR D. V. GLASS, B.Sc.(ECON.), Ph.D.
PROFESSOR F. GRUNDY, M.D., D.P.H.
D. CARADOG JONES, M.A.
PROFESSOR A. J. LEWIS, M.D., F.R.C.P.

Honorary Treasurer :

*GEOFFREY ELEY, C.B.E., M.A.

Honorary Librarian :

*CECIL BINNEY, M.A.

MEMBERS OF COUNCIL :

REGINALD BENNETT, V.R.D., M.P., M.A., B.M.(Oxon), B.Ch., D.P.M.
*PAUL BLOOMFIELD
MRS. CHARLES BOSANQUET, B.A.
W. RUSSELL BRAIN, M.A., D.M., F.R.C.P.
J. B. BRAMWELL, M.A., M.B.
MRS. R. CONRAD
PROFESSOR E. C. DODDS, M.V.O., M.D., F.R.C.P., F.R.S.
R. M. DYKES, M.A., M.D., D.P.H.
MRS. B. GOLDMAN
*THE HON. MRS. GRANT DUFF
PROFESSOR A. KENNEDY, M.D., F.R.C.P.
MISS E. LAWRENCE, B.Sc.(ECON.), Ph.D.
PROFESSOR T. H. MARSHALL, C.M.G., M.A.
A. S. PARKES, M.A., Ph.D., Sc.D., F.R.S.
*R. C. PRITCHARD
*J. A. FRASER ROBERTS, M.D., D.Sc., F.R.C.P.
*RICHARD RUMBOLD
F. YATES, M.A., D.Sc., F.R.S.

General Secretary :

C. P. BLACKER, M.A., M.D.

Business Secretary :

MISS F. B. SCHENK

*Members of the Executive Committee.